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Claims

[c1] 1. A method of installing stationary blades of a turbine comprising:
arranging a plurality of stationary blades in a plurality of rows with each stationary blade of a row having a root and an airfoil portion, the stationary blades of a row being mounted by the roots in an annular groove provided in a turbine casing, each annular mounting groove having two opposite sidewalls and a bottom wall at least one of the root of the stationary blades and a wall of said mounting groove defining a recess;
inserting a loading pin in the recess, between each said root and the groove, thereby keying the stationary blade root to the casing, said loading pin comprising a part-circumferential wall portion, generally corresponding in cross-sectional shape to cross-sectional shape of said recess, and a graduated wall portion, so that said pin is generally wedge-shaped.

[c2] 2. A method as in claim 1, wherein said graduated wall portion is substantially continuously inclined from a first, insert end to a second, proximal end of said loading pin to define a said wedge-shape, a cross sectional area of

said loading pin adjacent said insert end being less than a cross sectional area of said loading pin adjacent said proximal end.

[c3] 3. A method as in claim 2, wherein said graduated wall portion is continuously tapered from said insert end to said proximal end.

[c4] 4. A method as in claim 1, wherein a groove is defined longitudinally of the loading pin from proximal to distal ends of the loading pin.

[c5] 5. A method as in claim 1, wherein said part-circumferential wall portion is part-cylindrical shaped.

[c6] 6. A method as in claim 1, wherein said loading pin is generally D-shaped in cross-section.

[c7] 7. A method as in claim 1, wherein said recess is defined in said wall of said mounting groove, and wherein a corresponding portion of the root of the stationary blade is machined to define a graduated surface generally corresponding to the graduated wall portion of the loading pin, whereby said inserting of said loading pin produces a graduated surface to graduated surface wedge displacement of said root with respect to said groove.

[c8] 8. A method as in claim 1, wherein said loading pin is

formed from steel.

[c9] 9. A method as in claim 1, wherein said graduated wall portion is defined by at least first and second step surfaces respectively extending from a first, insert end of said loading pin and second, proximal end of said loading pin, said first step surface being closer to a central longitudinal axis of said loading pin than said second step surface.

[c10] 10. A method as in claim 9, wherein an inclined transition surface extends between a plane of said first step surface and a plane of said second step surface.

[c11] 11. A method as in claim 9, wherein said first step surface and said second step surface are each generally planar.

[c12] 12. A method as in claim 9, wherein said first step surface and said second step surface are each generally parallel to a longitudinal axis of said loading pin.

[c13] 13. A turbine structure comprising:
a rotor having a plurality of rotating blades or buckets mounted thereto, the blades being mounted in rows to extend radially outward from an outer surface of the rotor;
a stationary casing is coaxially supported around the ro-

tor and having a plurality of stationary blades or nozzles arranged in rows to alternate with the rows of rotating blades, at least some of said stationary blades including a foil portion extending from an inner surface of the stationary casing and a base portion including a root for being received in a corresponding groove of the stationary casing;

at least one of the root of the stationary blade and the groove of the stationary housing including a recess defining a space between the root of the stationary blade and the groove;

a loading pin disposed in the space defined by the recess to interconnect the casing and root, said loading pin comprising a part-circumferential wall portion, generally corresponding in cross-sectional shape to cross-sectional shape of said recess, and a graduated wall portion, so that said pin is generally wedge-shaped.

[c14] 14. A turbine structure as in claim 13, wherein said graduated wall portion is substantially continuously inclined from a first, insert end to a second, proximal end of said loading pin to define said wedge-shape, a cross sectional area of said loading pin adjacent said insert end being less than a cross sectional area of said loading pin adjacent said proximal end.

[c15] 15. A turbine structure as in claim 14, wherein said graduated wall portion is continuously tapered from said insert end to said proximal end.

[c16] 16. A turbine structure as in claim 13, wherein a groove is defined longitudinally of the loading pin from proximal to distal ends of the loading pin.

[c17] 17. A turbine structure as in claim 13, wherein said part-circumferential wall portion is part-cylindrical shaped.

[c18] 18. A turbine structure as in claim 13, wherein said loading pin is generally D-shaped in cross-section.

[c19] 19. A turbine structure as in claim 13, wherein said recess is defined in said wall of said mounting groove, and wherein a corresponding portion of the root of the stationary blade is machined to define a graduated surface generally corresponding to the graduated wall portion of the loading pin, whereby said loading pin wedgingly locks said root with respect to said groove.

[c20] 20. A turbine structure as in claim 13, wherein said loading pin is formed from steel.

[c21] 21. A turbine structure as in claim 13, wherein said graduated wall portion is defined by at least first and second step surfaces respectively extending from a first,

insert end of said loading pin and second, proximal end of said loading pin, said first step surface being closer to a central longitudinal axis of said loading pin than said second step surface.

[c22] 22. A turbine structure as in claim 21, wherein an inclined transition surface extends between a plane of said first step surface and a plane of said second step surface.

[c23] 23. A turbine structure as in claim 21, wherein said first step surface and said second step surface are each generally planar.

[c24] 24. A turbine structure as in claim 21, wherein said first step surface and said second step surface are each generally parallel to a longitudinal axis of said loading pin.